Comments in response to FCC Notice of Inquiry (MB Docket No. 05-255**)**
Re: (**ANNUAL REPORT TO CONGRESS ON VIDEO COMPETITION**)
Submitted by:
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Network Domain is the leader in innovation regarding what the FCC refers to as Navigation Device; we refer to it as a "Media Access Gateway". Network Domain also is the leader in development of interactive new media that's simultaneously both TV and Internet content. We are the definitive source of information regarding the future primary digital home platform (Media Pony Platform) and hybrid content delivery system with integrated transaction tracking. All our products are in development now; none are currently in the market at the time of this writing due to the continued blocking of the Navigation Device market by CableLabs. Our approach is 100% consumer orientated and as such our sole concern is to implement technologies available into the ideal consumer product without concern for the special interests of the cable industry, consumer electronics companies or even standards organization. Our products set new standards. We work hard for the consumer, not special interest groups. We are providing only short no-non-sense comments to the many critical issues addressed in the request for comments document. Additional information is available on request.

RE: Head-to-Head Competition

1. **"lower prices"**, Who has seen lower prices from their cable company? No One! What is perceived as a competitive market by the FCC is actually not at all competitive. The FCC has allowed multiple monopoly businesses to a few select players and has continually extended the monopoly powers to those few players to the detriment of the public.

2. **"more programming choices"** The term "Idiot Box" is not without merit and the reason behind that term is thriving with the many channels of trash programming provided by the cable companies.

3. **"better quality of service"** No!

4. **"other consumer benefits"** Non-Existent, likewise competition is non-existent

RE: Steps that will encourage investment in new broadband networks

1. Support an open system of IPTV over Internet and reduce cable operators to only broadband providers. With an open market for services that use IP, prices will drop for the consumers and choice will be greatly enhanced. The sole focus of providing broadband IP rather than providing content would be a big step in the right direction in regard to cable operators. This cannot be implemented quickly; however, it is the inevitable progression that should be taking place. The only thing that will prevent it from taking place is if the FCC continues to provide protection for the monopolies currently in control of our communications infrastructure. What needs to be realized is that the idea of TV content being separate from web content, audio content, Web services, online gaming and so on is incorrect, all content, services, software and communications need to be considered related parts of IP services. With this thought in mind consider that content of the future has the potential to include any and all the aspects, to define separate networks for separate parts of content is an error. In the future stand alone video content without interactive enhancements will be rare. The mainstream content will be a combination of at least video and web pages but may also involve play along games, voice, instant messaging and other aspects. The reason for mainstream content at minimum involving video and interactive web elements is in conjunction with a targeted advertising business model that provides generally free video content with few or no video commercial interruptions. The described system places related in sync web content in a window along with targeted advertising. The window preferably is displayed on a secondary wireless display and remote control. The described interaction is completely optional.

2. Considerations need to be made in regard to provisioning bandwidth where it is needed most. This involves monitoring usage of IP in comparison to ATSC. In the short term ATSC will take over and NTSC bandwidth freed up. This is an intermediary step, the next step will be IPTV that's a hybrid interactive content delivered by VOD that is also a hybrid cross of broadcast and VOD. Over time less bandwidth will be needed for ATSC as IPTV becomes prevalent.

RE: Reduce barriers to competition in the video market and increase consumer choice

1. Switch to an open system of IPTV and reduce cable operators to simple broadband providers to drastically increase consumer choice and enable open competition while also enabling innovation and the promise of the future digital home consumers have been anticipating.

RE: An uneven playing field for the distribution of video programming

1. It would be best to mandate immediate bandwidth minimums available from cable operators to open Internet based IP services that will in turn enable delivery of all content over IP. Too much bandwidth is allocated to ATSC and other functions that are not in the public's best interests.

Broadband fees are too high and need to be regulated.

RE: Consumer Equipment

2. **"availability and compatibility of customer premises equipment"** CableCard and CableLabs continue to block innovation and the open plug & play mandated by congress. Year after year CableLabs has frustrated efforts to open the navigation device to the PC industry; this is unwarranted to say the least. CableLabs will say it has to do with protecting content when in-fact it has to do with protecting the navigation device monopoly and the in place closed system.

3. **"video programming on an a la carte basis"** VOD over IP is what makes sense now and in the future.

4. **"retail availability of navigation devices"** non existent, blocked by CableLabs refusal to cooperate with the congressional mandate for an open system.

5. **"obstacles to equipment manufacturers"** Consumers are waiting for the digital home of the future, the FCC has hindered that becoming a reality. For example, the broadcast flag and the relationship with CableLabs that has a sole focus, the benefit of the cable companies.

6. **"customer premises equipment availability"** Lack of consumer choice is an understatement, the consumers generally don't even know what could be possible if innovation was allowed to flourish.

7. **"approval to attach devices to MVPD systems"** No! Little has changed in regard to an open market and consumer choice. Some equipment maybe interchangeable, however, innovation remains blocked by CableLabs special interest.

RE: Technical Standards

1. **"current technical rules such as the "plug-and-play" provide a level playing field"** No! CableLabs have blocked innovation that doesn't make cable companies money and refuses to open the navigation device to the PC industry. The primary source of innovation is the PC industry, that industry has no functional CableCard and thus is shut out of the Navigation Device market. The cable companies don't seem to be subject to the FCC or congressional mandate, they have chosen not to comply.

2. **"actions with respect to the establishment of technical rules and standards that the Commission may take to foster greater competition among video service"** Yes! Many things should be done, disband the special interest group CableLabs and start making plans for the switch over from the obsolete ATSC to IPTV. At minimum video over internet must be protected, the cable companies must be stopped from blocking or at minimum hinder the quality of video content delivery over Internet.

RE: Cable operators providing video-on-demand and DVR service

1. **"Have competitors to cable been foreclosed from obtaining VOD programming due to exclusive distribution contracts for that programming"** Internet based IPTV will solve all such concerns and provide the consumer with many options, a truly free and open market.

2. **"how much of the cable system capacity and bandwidth is dedicated to delivering VOD services"** All bandwidth should be made available to consumers for IP services they want to use.

3. **"single tuner service, and how many offer dual tuner service"** IPTV doesn't require multiple tuners and would eliminate this concern.

4. **"What options for storage capacity are being offered?"** Cable and other broadband companies should not be providing storage. The Navigation Device will never be an open market with current FCC direction.

5. **"What percentage of the DVR set-top boxes are leased as opposed to purchased by the subscriber?"** Set-top-boxes should not be mandated by service providers and they continue to be year after year despite years old congressional mandate.

6. **"Are the boxes branded by the cable system or by a third party developer."** Set-top boxes should not be mandated by service providers, a cable company branded set-top-box should be illegal.

7. **"How do strategic and co-marketing relationships between cable MSOs and DVR manufacturers affect competition in the video programming market?"** Very negatively!

8. **"to what extent will consumer uptake of DVRs affect consumer demand for VOD?"** Very little, however, the DVR will be a function of the VOD management. Any replay of content should not require the content be resent.

RE: High-speed Internet access

1. **"Has any cable operator blocked access to certain kinds of Internet content or applications and, if so, what kind?"** Yes this is common practice, example VoIP and many server functions. Cable companies are also known to interfere with streaming video to reduce quality of service.

2. **"pricing discounts if they subscribe to both video services and cable modem service?"** Its all about the so called triple play or quadruple play, however, consumers benefit greatly bypassing cable company services and accessing the open market on the Internet for all services that work with the broadband connection provided by the cable company. Cable companies should provide nothing more than broadband IP.

3. **"Are cable operators who offer cable modem service giving subscribers a**

choice of Internet service providers?" The public cable infrastructure should be made available to all Internet service providers.

4. **"Is VoIP offered separately from cable modem service or cable service?"** Cable operators should not be providing VoIP or any other service.

RE: Cable Labs and OCAP

1. The secretive OpenCable requires a Confidential Information Access Agreement

2. OCAP Open Cable Applications Platform has no legitimate excuse for existence

3. Any planned deployments for this technology should be stopped.

RE: *Navigation Device*

1. **"interoperable set-top boxes"** No viable CableCard for PC TV tuner cards, it's business as usual for cable companies and Set-Top-Box makers. Innovation from the PC Industry remains blocked. We don't have an open market for the Navigation Device.

2. **"CableLabs development of specifications?"** The fox guarding the hen house.

3. **"How effective has the CableLabs process been"** Excellent for the cable companies! Consumers are being denied the promise of the anticipated digital home!

4. **"availability of CableCARDs how cable operators make this option known to the public"** CableCard is not available to the most innovative industry, the PC Industry. This is a critically important issue.

5. **"PacketCable multimedia services over two-way cable plant"** Do we have a real need to reinvent the internet under cable companies ownership?

6. **"bidirectional (*i.e.*, two-way) digital cable products, capable of supporting pay-per-view, VOD and interactive services"** Is there a need to reinvent the internet under cable companies ownership or could we work to switch to IPTV over internet.

7. **"software-based conditional access"** This could have been made long ago if CableLabs wanted to, they didn't!

8. **"competetive marketplace for digital cable-ready receivers, including DVRs."** Not at all, until standard PC based hardware and software is available this will not be a competetive marketplace and CableLabs will maintain status quoe if nothing is done.

9. **"What problems have been encountered with CableCARDs"** You cannot

use one with PC hardware, this is blocking competion and inovation.

RE: *Regulatory Issues*:

"What, if any, additional rules the Commission should promulgate to promote diversity of information sources." The FCC will need to retrieve bandwidth assigned to ATSC, the sooner that is realized the better. In the meantime cable operators must provide the open Plug & Play that was mandated years ago. CableLabs is not the answer to anything at all. The FCC needs to be directed to break the insider loop and not have any dealings with CableLabs.

RE: Internet Video, *Streaming and Downloadable Video & Internet Protocol Television*:

1. **"not yet broadcast quality, require very high speeds of transfer"** Not so, any desired quality level is available and no more bandwidth is required, one problem is the massive amount of wasted bandwidth that ATSC uses up, ATSC is a wasteful endeavor on many levels. Providing many channels rather than what is wanted is highly inefficient, expensive, and wasteful to allocate spectrum over the critical last mile. Broadcast is a legacy system of content delivery, VOD is all that makes sense with the current state of technology.

2. **"most near term use of the Internet to provide video will be for downloadable video"** Not true, IPTV over standard internet will provide to consumers optimal usage of available bandwidth and support new hybrid content. This is the logical progression and in the best interest of the consumer. CableLabs and cable companies can only slow the inevitable switch to IPTV.

3. **"what criteria should be used to compare picture quality of Internet-based video to video programming distributed by traditional broadcasters"** Its all the same, video is video regardless of how it is transported.

4. **"quality of readily available streaming and downloadable video the rate of video packet delivery, jitters, delays factors that could impair video quality?"** ATSC hogging up too much bandwidth is the major negative factor to potential IPTV over Internet quality problems.

5. **"real-time streaming of video over the public Internet often depends on a myriad of factors, including the choice of video codecs, web server designs, Internet traffic conditions, and the Internet provider's network infrastructures, end-to-end service quality."** IPTV is technologically superior to ATSC and could support higher resolution than current HDTV standards and is highly efficient. Cable infrastructure could and should be used to provide the underlying IP service for IPTV, no other issues hinder real-time streaming of video like the last mile, the existing coax cable should be used and thus eliminate the need to install fiber to the house and enable the consumer to use bandwidth to the home as desired rather than wasting it on ATSC. Cable companies must be stopped from

hindering streaming media over the Internet.

6. **"when Internet video will become a viable competitor in the market for the delivery of video programming."** It is more viable now than ATSC, bandwidth priorities need to be correctly provisioned to enable high speed internet.

7. **"should IPTV be considered a separate service, or simply a different means of video programming transmission?"** Cable companies should not provide services beyond IP and IPTV is simply a better means of video programming transmission. Broadband providers should be banned from providing service beyond IP. The content and services can be provided on an open market that will provide mainly free content and some pay content. A large majority of content can be provided for free over the Internet paid for by advertising, a business model similar to pre cable companies.

8. **"We seek projections of whether and when IPTV will have a competitive impact on the market for the delivery of video programming."** IPTV is providing video over IP protocol, if the IPTV system is not open to the Internet it will have little affect on competition in comparison to an open system over the Internet. Bandwidth must be made available for IPTV over standard Internet. The closed systems planned by telephone companies will have no more affect on the market than satellite based systems. The idea that content is TV or Web is a legacy concept. Content will be a combined hybrid media where both Web and TV is present simultaneously. It is critically important that the future is clearly understood now to avoid further mistakes. The transition to digital should have been to IPTV rather than ATSC and that will need to be addressed in the future.

9. **"We also seek comment on what Digital Rights Management (DRM) and other security technologies IPTV providers use, and the effect of the choice of DRM on competition. We also request comment on any other competitive or regulatory issues raised by the provision of IPTV over broadband Internet connections."** This is an issue between the content provider and the consumer. Let the content provider offer content under terms they see fit and if the consumer agrees it will work, if the terms are too restrictive the content provider will need to adjust. Consumers know what fair use is and will demand it. Just as supply and demand drives a market price, content restrictions and consumer acceptance will force a compromise. Too much third party FCC intervention is only adding a massive amount of complexity to the issue. The future of IPTV over Internet will provide free content that is also free of DRM issues. The free content will also be a hybrid media where both Web and TV is present simultaneously.

10. "**delivering IPTV over their broadband Internet connections**" This is the very best option for the consumer, they need to be provided the bandwidth

needed to deliver on the promise of the digital home. Cable companies don't care about this if they cannot control it, own it and make money on it. Cable companies and CableLabs are in fact the major blocker of innovation for self motivated reasons. Network Domain has the platform and delivery system to deliver on the promise of the digital home. No cable company has any interest in providing the benefits it offers to the consumer.

RE: Broadcast Television Service & *Digital Television Broadcasting*

1. **"Consumers who do not subscribe to an MVPD service rely on over-the-air transmission of broadcast television signals."** They also rely on IPTV over Internet.

2. **"carriage of DTV programming by MVPDs, including satellite systems as well as cable systems"** With IPTV over Internet this would not be an issue.

3. **"We also invite comment on programming content that is available in DTV formats, equipment that is used to receive DTV programming, and consumer education efforts."** If consumers understood the factors they would be unhappy about the misguided way the transition to digital system is being handled. They should hold out for IPTV.

4. **"Consumer Access to Broadcast Television Service over-the-air broadcast television range from 13 percent to 19 percent"** This small percent is not a major issue, why have ATSC Tuners in 100% when only 13% is needed temporarily until IPTV over Internet is up? Major issues are at stake and we have this confusion going on!

5. **"carriage agreements between MVPDs and broadcasters"** IPTV can carry all content, everyone would be happy with it other than the cable companies.

6. **"plans to increase the amount of DTV programming carried."** Plans to get in on IPTV are much more important to content providers.

RE: DTV Equipment

1. **"Tuner cards meeting the Advanced Television System Committee (ATSC) DTV standards may be used in personal computers to view programming on a desktop computer monitor. How many of these cards have been sold?"** The idea that "Tuner Cards" are used for a Desktop Computer is true; however this is a misunderstanding by the FCC. While Desktop Computers do use Tuner Cards this is not the primary use of Tuner Cards. They would be a primary method of connecting to ATSC content if CableCard worked with Tuner Cards. Tuner Cards will not be primarily for desktop PC systems as the FCC envisions. The FCC doesn't seem to understand the importance of PC based hardware for the future Media Access Gateway. The FCC is not enforcing the congressional mandate to

open the navigation device market. This is a hindering of an industry and hindering of innovation at the public's expense. This also slows the consumer adoption to digital cable. All indicators are the cable companies are in control here, not the FCC.

2. **"equipment used to convert digital signals to analog"** It would be better to convert digital video to analog and let the consumer continue to use the TV that's already in the home. The FCC should not push the expensive HDTV displays, many can not afford that and for many it maybe better to cross the digital divide than get high resolution images on TV. The Network Domain Media Pony platform accomplishes this and much more.

3. **"we ask commenters to provide projections on the number of households that are planning to buy a digital television set with a built-in digital tuner within the next year, in the next two years, and in the next three years. How many of these television sets will have a screen size of 36 inches or larger; how many will have a screen size 25-35 inches; and how many will have smaller screens?"** Screen size is irrelevant and not something the FCC should be counting. A DTV tuner in displays solves nothing.

RE: *DTV Consumer Education Efforts*

4. **"efforts to educate consumers about the digital transition and to promote DTV"** If consumers were well educated in the facts they would be demanding a switch to IPTV. Maybe the FCC and congress are in more need of education on the issues than consumers, in-fact we would be happy to educate the FCC and congress.

RE: Home Networking

1. **"efforts by cable operators in home networking"** Cable companies don't have any business attempting to move into home networking.

2. **"central processing device = set-top box, cable modem"** The FCC should consider the primary central processing device is a computer although cable companies have shut out computers from HDTV Content.

3. **"CableHome specifications, home networking equipment for use over a cable operator's system"** CableLabs is the fox, home network the hen house! This is an example of abuse of power and a continued trend to protect and further extend monopolies.

4. **"seek information on other emerging applications including updates on home networking in general, Wi-Fi, and Home Plug."** Here what really maters is UWB technologies and the Media Pony platform. This is a critical issue, congress and the FCC need to have a realistic understanding of the issues to be affective and proactive.

5. **"We seek information on the introduction of home gateways. CableHome**

1.1, and PacketCable 1.1" CableLabs is **not** going to set any meaningful standards in home networking and should not be reinventing the Internet for the cable companies benefit.

Now then, critically important to this discussion is to really get an understanding of the digital home of the near future and how content will be delivered and consumed.

Network Domain LLC

Entertainment and Media Access Gateway

History;

In simple terms the general logic behind this subject matter is the idea that the Set-Top-Box could expand in functionality to accommodate all communications and media access, thus the term Media Access Gateway. The shortcoming of this endeavor is that people don't like to use some of the media provided by the Media Access Gateway on a large across the room display, thus the capabilities are not comfortably usable and as such the expense of enabling computing abilities into the set-top-box was not warranted.

Future;

Now we have new wireless video technologies that will change the outlook drastically. The ability to transmit gigabit per second wirelessly opens the door to an inexpensive one-box Media Access Gateway product that can multitask, outputting video and audio to multiple rendering devices. The ideal device for the described secondary display rendering is inexpensive and can provide the essence of computer functionality thus has a combination keyboard, mouse pointer and display. This unit generally takes the form factor of a notebook PC; however, it has no processing abilities and is only an inexpensive remote control interface. Thus the future Media Access Gateway is a joined TV/PC platform as has been contemplated by many over the last few years. Although past attempted implementations were unsuccessful new implementations based on the above described technologies and methods will thrive.

Combined web & TV as a hybrid content type;

The described joined TV/PC platform provides for non audience disruptive interaction and thus provides an iTV system that users can wholeheartedly embrace. The interaction (clicking on a video section) triggers the interaction on the secondary display thus removing the disruption of the viewing audience on the large display. Content delivery to this platform can be in sync web and video content. The advertising model likewise will be non disruptive and highly efficient web browser based.

Refined solution;

With the above described platform and content delivery system in place some problems need to be resolved to refine the concept into a highly functional and presentable product for the consumer. With the dual video output system the content windows maybe dragged from display to display, however, one display is always primary and the other secondary. Typically the primary display would output to the wireless device, the need to swap the displays output in circumstances is present and is addressed. In practical usage the multitasking Media Access Gateway will be rendering output of multiple sources, thus the need to address routing the audio portions of the output to a network of audio rendering devices is also addressed. The specifics of providing content to the platform are also addressed using IPTV/VOD with a metadata system.

Value Proposition;

To assess the viability of the platform and the feasibility of the described hybrid content one obvious condition is that the platform must be in existence to receive the content, thus the platform must be viable in the market on its own before any content is available on a large scale, thus the hybrid content would be a future added bonus in consideration of the value proposition when considering a purchase. This consideration was never a problem because the hybrid content system was a byproduct of the development of the platform. The platform completely address the current disconnect of the PC, TV, and stereo. It is highly cost affective because the additional costs involved are very minimal in comparison to the provided multi functionality. For example consider the consumer that is considering a home PC. Currently the Media Center PC would be considered, however the cost of that system in comparison to our platform that greatly multiplies functionality is very

minimal, in fact once the platform is on the market it is difficult to imagine a consumer purchasing a home media PC not based on our platform. It affectively replaces most consumer devices in the home; however, it also is 100% compatible with legacy equipment if that is desired.

Platform References

http://www.mediapony.net/

http://stackaudio.com/